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09/988,991	11/21/2001	James Rowe	BAI525-645/011020	9523

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EXAMINER	
TRAN, TRANG U	

ART UNIT	PAPER NUMBER
2614	15

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/988,991	ROWE ET AL.	
	Examiner	Art Unit	
	Trang U. Tran	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2-4, 8-10, 12-13 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the limitation "the optimization and setting" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 3 recites the limitation "the optimization process" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 4 recites the limitation "the setting of the amplitude gain" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "the signal quality" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the signal quality" in line 1 and the limitation “the bit error rate” in line 2. There are insufficient antecedent basis for these limitations in the claim.

Claim 12 recites the limitation "the signal quality" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the value" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 16 recites the limitation "the optimum signal" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balaban et al. (US Patent No. 6,369,857 B1) in view of Uskali et al. (US Patent No. 6,735,423 B1).

In considering claim 1, Balaban et al discloses all the claimed subject matter, note 1) the claimed a system for the generation of television programs selected from a plurality of television channels said system comprising: signals carrying data is met by the RF television signals which receives at antenna 110 (which may include a cable or satellite TV signal input as well as an air-wave broadcast signal input) (Fig. 2, col. 3, line 58 to col. 4, line 14), 2) the claimed a broadcast data receiver, said receiver provided to receive any or any combination of analogue and /or digital data signals at a series of different frequencies and to process the data to allow the generation of television programs which are displayed to a user is met by the TV signal receiver 100 (Fig. 2, col. 3, line 58 to col. 6, line 19), and 3) the claimed said broadcast receiver further including, a tuner is met by the tuner 112 which converts the input signal as a radio frequency

signal into an audio intermediate frequency signal and video intermediate frequency signal (Fig. 2, col. 3, line 58 to col. 4, line 14).

However, Balaban et al explicitly do not disclose the claimed first and second amplitude gain controls which allow the adjustment of first and second gain levels when receiving a signal, when a signal frequency is selected in response to the user selection of a television channel to be generated by the receiver, the broadcast data receiver tunes to the required frequency, receives the signal and the broadcast data receiver then adjusts the first and/or second gain levels to determine the appropriate gain levels which provide the optimum signal for that signal frequency with regard to predefined parameters.

Uskali et al teach that the receiver 10 comprises at least two variable gain devices 12, 14, a power detector 32, a control mechanism 34 and a microprocessor 30 (collectively referred to as the AGC system in the preferred embodiment of the present invention), these components can reside in the receiver 10 as discrete components or combined components with any other compatible component of the receiver 10, preferably, the variable gain devices 12, 14 are within a common signal path and are preferably variable attenuators, but could also be variable gain amplifiers...and the power detector 32 provides a means to measure the incoming signal level, based on the incoming signal level, the control mechanism 34 sets the variable gain devices 12, 14 in a closed-loop algorithm that in turn sets the desired signal level into the demodulator 28 to a predetermined power level (hereinafter referred to as a default AGC algorithm), as the incoming signal level varies, the control mechanism 34 adjusts the variable gain

devices 12, 14 within the closed-loop control system by applying the first and second attenuation value (V1 and V2) in decibels (dB) to the variable gain devices 12, 14, respectively, to maintain a constant power level at the demodulator 28 (Fig. 1, col. 2, line 37 to col. 3, line 10).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the variable gain devices 12, 14 in a closed-loop algorithm as taught by Uskali et al into Balaban et al's system in order to obtain optimal performance in the receiver by employing an automatic gain control system (col. 1, lines 26-29 of Uskali et al).

In considering claim 2, the claimed wherein the optimization and setting of the gain control levels is performed for each new signal frequency selected when a new channel is selected by the broadcast data receiver user is met by the algorithm may be restarted periodically or may be trigger by events, **such as a receiver channel change** (Fig. 3, col. 6, lines 2-30 of Uskali et al).

In considering claim 3, the claimed wherein the optimization process is repeated at regular intervals is met by **the algorithm may be restarted periodically** or may be trigger by events, such as a receiver channel change (Fig. 3, col. 6, lines 2-30 of Uskali et al).

In considering claim 4, the claimed wherein the setting of the amplitude gain control levels is checked continuously is met by the variable gain devices 12, 14 within the closed-loop control system which are checked continuously by the control

mechanism 34 to maintain a constant power level at the demodulator 28 (Fig. 1, col. 2, line 37 to col. 3, line 10 of Uskali et al).

In considering claim 5, the claimed wherein said broadcast data receiver further includes, storage means in which previously selected settings for particular signal frequencies are stored and which are referred to when that signal is, again selected to be received, with the receiver setting the receiving parameters in accordance with those stored in the storage means and then starts from those settings when subsequently checking to ascertain whether those settings are providing the optimum signal reception at that instant is met by **the receiver's memory 36** which stores the measurement of the input power and modulation type for each channel during periods when the receiver 10 is not used for its primary function... and until sufficient channel characterization is complete, the default AGC algorithm is used, once the input channels are sufficiently characterized, the variable gain devices 12, 14 are set for optimal receiver 10 performance, the microprocessor 30 retrieves the stored input power for the desired channel and compares the input power for the desired channel against the first threshold and subsequently checking with the other thresholds (Fig. 3, col. 3, line 11 to col. 6, line 30 of Uskali et al).

In considering claim 6, the claimed wherein at the time of factory setting of said broadcast data receiver standard settings may be input into said storage means to provide a starting point for each signal frequency from which said broadcast data receiver tuner commences when the signal frequency is first chosen in use is met by **the receiver's memory 36** which stores the measurement of the input power and

modulation type for each channel during periods when the receiver 10 is not used for its primary function, such as power-on, channel scanning, downstream idle time or receive terminal (e.g., television or computer) non-use (Fig. 3, col. 3, line 11 to col. 6, line 30 of Uskali et al).

In considering claim 7, the claimed wherein upon the first selection of any signal frequency a series of common default settings are referred to by said broadcast data receiver is met by the default AGC algorithm is performed once the input channels are sufficient characterized (Fig. 3, col. 3, line 38 to col. 6, line 30 of Uskali et al).

In considering claim 8, the claimed wherein the signal quality is determined with reference to the demodulator error correcting circuitry in broadcast data receiver is met by the signal quality estimator 22 within the demodulator 28 which may be equipped with a means of estimating the desired input signal signal-to-noise ratio (SNR) or other receiver performance indicators, such as bit error rate (BET), or any combination of power levels, SNR, BER or any other receiver performance parameters (col. 5, line 44 to col. 6, line 30 of Uskali et al).

In considering claim 9, the claimed wherein the signal quality and optimization process is determined with respect to the bit error rate for the signal frequency is met by the signal quality estimator 22 within the demodulator 28 which may be equipped with a means of estimating the desired input signal signal-to-noise ratio (SNR) or other receiver performance indicators, such as bit error rate (BET), or any combination of power levels, SNR, BER or any other receiver performance parameters (col. 5, line 44 to col. 6, line 30 of Uskali et al).

In considering claim 10, the claimed wherein said bit error rate is adjusted by altering the first and second values of the amplitude gain values and hence arriving at the amplitude gain control value or value; which provide the optimal signal quality at a particular signal frequency is met by as the incoming signal level varies, the control mechanism 34 adjusts the variable gain devices 12, 14 within the closed-loop control system by applying the first and second attenuation value (V1 and V2) in decibels (dB) to the variable gain devices 12, 14, respectively, to maintain a constant power level at the demodulator 28 (Fig. 1, col. 2, line 37 to col. 3, line 10 of Uskali et al).

In considering claim 11, Balaban et al discloses all the claimed subject matter, note 1) the claimed a broadcast data receiver, said receiver comprising: means to receive any or any combination of analogue and /or digital data signals transmitted at different frequencies within a frequency range and carrying data which when received and processed by the receiver allows the generation of audio and video for television programs which are displayed to a user via a television is met by the TV signal receiver 100 (Fig. 2, col. 3, line 58 to col. 6, line 19), and 2) the claimed a tuner is met by the tuner 112 which converts the input signal as a radio frequency signal into an audio intermediate frequency signal and video intermediate frequency signal (Fig. 2, col. 3, line 58 to col. 4, line 14).

However, Balaban et al explicitly do not disclose the claimed first and second amplitude gain controls which allow the adjustment of first and second gain levels when receiving a signal, when a signal frequency is selected in response to the user selection of a television channel to be generated by the receiver, the receiver tunes to the

required frequency, receives the signal and the receiver then checks and, if necessary, adjusts the first and/or second gain levels to determine those appropriate gain levels which provide the optimum signal for that signal frequency at that instant.

Uskali et al teach that the receiver 10 comprises at least two variable gain devices 12, 14, a power detector 32, a control mechanism 34 and a microprocessor 30 (collectively referred to as the AGC system in the preferred embodiment of the present invention), these components can reside in the receiver 10 as discrete components or combined components with any other compatible component of the receiver 10, preferably, the variable gain devices 12, 14 are within a common signal path and are preferably variable attenuators, but could also be variable gain amplifiers...and the power detector 32 provides a means to measure the incoming signal level, based on the incoming signal level, the control mechanism 34 sets the variable gain devices 12, 14 in a closed-loop algorithm that in turn sets the desired signal level into the demodulator 28 to a predetermined power level (hereinafter referred to as a default AGC algorithm), as the incoming signal level varies, the control mechanism 34 adjusts the variable gain devices 12, 14 within the closed-loop control system by applying the first and second attenuation value (V1 and V2) in decibels (dB) to the variable gain devices 12, 14, respectively, to maintain a constant power level at the demodulator 28 (Fig. 1, col. 2, line 37 to col. 3, line 10).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the variable gain devices 12, 14 in a closed-loop algorithm as taught by Uskali et al into Balaban et al's system in order to obtain optimal

performance in the receiver by employing an automatic gain control system (col. 1, lines 26-29 of Uskali et al).

Claim 12 is rejected for the same reason as discussed in claim 8 above.

In considering claim 13, the claimed wherein the value which is measured is subject to control alterations to said broadcast data receiver is met by the power detector 32 provides a means to measure the incoming signal level, based on the incoming signal level, the control mechanism 34 sets the variable gain devices 12, 14 in a closed-loop algorithm that in turn sets the desired signal level into the demodulator 28 to a predetermined power level (hereinafter referred to as a default AGC algorithm), as the incoming signal level varies, the control mechanism 34 adjusts the variable gain devices 12, 14 within the closed-loop control system by applying the first and second attenuation value (V1 and V2) in decibels (dB) to the variable gain devices 12, 14, respectively, to maintain a constant power level at the demodulator 28 (Fig. 1, col. 2, line 37 to col. 3, line 10 of Uskali et al).

In considering claim 14, the claimed wherein there are two or more amplitude gain control loop levels and the alterations made to each are based upon that which provides the lowest received signal bit error rate for each is met by as the incoming signal level varies, the control mechanism 34 adjusts the variable gain devices 12, 14 within the closed-loop control system by applying the first and second attenuation value (V1 and V2) in decibels (dB) to the variable gain devices 12, 14, respectively, to maintain a constant power level at the demodulator 28 (Fig. 1, col. 2, line 37 to col. 3, line 10 of Uskali et al).

In considering claim 15, the claimed wherein said broadcast data receiver implements a two dimensional search in the amplitude gain control range to minimize the bit error rate is met by as the incoming signal level varies, the control mechanism 34 adjusts the variable gain devices 12, 14 within the closed-loop control system by applying the first and second attenuation value (V1 and V2) in decibels (dB) to the variable gain devices 12, 14, respectively, to maintain a constant power level at the demodulator 28 (Fig. 1, col. 2, line 37 to col. 3, line 10 of Uskali et al).

In considering claim 16, Balaban et al discloses all the claimed subject matter, note 1) the claimed a method for receiving a data carrier signal selected from one of a range of signal frequencies, said method comprising the steps of: processing received data for use to generate video and audio for a television or radio program by a broadcast data receiver connected to a display screen and speakers is met by the TV signal receiver 100 (Fig. 2, col. 3, line 58 to col. 6, line 19), 2) the claimed receiving a user selection of a particular television channel via the broadcast data receiver is met by the tuner 112 which converts the input signal as a radio frequency signal into an audio intermediate frequency signal and video intermediate frequency signal (Fig. 2, col. 3, line 58 to col. 4, line 14), 3) the claimed identifying the signal frequency for that channel is met by the tuner 112 which converts the input signal as a radio frequency signal into an audio intermediate frequency signal and video intermediate frequency signal (Fig. 2, col. 3, line 58 to col. 4, line 14), and 4) the claimed tuning the receiver utilizing a tuner to receive the frequency signal is met by the tuner 112 which converts the input signal as a

radio frequency signal into an audio intermediate frequency signal and video intermediate frequency signal (Fig. 2, col. 3, line 58 to col. 4, line 14).

However, Balaban et al explicitly do not disclose the claimed upon signal frequency reception, adjusting at least first and second amplitude gain control levels and assessing the change in signal quality, said quality determined with respect to predefined parameters; and upon identifying the optimum signal, maintaining those amplitude gain control levels.

Uskali et al teach that the receiver 10 comprises at least two variable gain devices 12, 14, a power detector 32, a control mechanism 34 and a microprocessor 30 (collectively referred to as the AGC system in the preferred embodiment of the present invention), these components can reside in the receiver 10 as discrete components or combined components with any other compatible component of the receiver 10, preferably, the variable gain devices 12, 14 are within a common signal path and are preferably variable attenuators, but could also be variable gain amplifiers...and the power detector 32 provides a means to measure the incoming signal level, based on the incoming signal level, the control mechanism 34 sets the variable gain devices 12, 14 in a closed-loop algorithm that in turn sets the desired signal level into the demodulator 28 to a predetermined power level (hereinafter referred to as a default AGC algorithm), as the incoming signal level varies, the control mechanism 34 adjusts the variable gain devices 12, 14 within the closed-loop control system by applying the first and second attenuation value (V1 and V2) in decibels (dB) to the variable gain devices 12, 14,

respectively, to maintain a constant power level at the demodulator 28 (Fig. 1, col. 2, line 37 to col. 3, line 10).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the variable gain devices 12, 14 in a closed-loop algorithm as taught by Uskali et al into Balaban et al's system in order to obtain optimal performance in the receiver by employing an automatic gain control system (col. 1, lines 26-29 of Uskali et al).

Claim 17 is rejected for the same reason as discussed in claim 5 above.

Claim 18 is rejected for the same reason as discussed in claim 2 above.

Claim 19 is rejected for the same reason as discussed in claim 4 above.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Abe et al. (US Patent No. 6,650,878 B1) disclose automatic gain control circuit and receiver having the same.

Okada et al. (US Patent No. 6,333,765 B1) disclose television receiver having an AGC circuit to control the gain on a tuner.

Takagi (US Patent No. 6,226,504 B1) discloses receiving apparatus.

Mizukami et al. (US Patent No. 5,572,264) disclose high definition TV signal receiver.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trang U. Tran whose telephone number is (703) 305-0090. The examiner can normally be reached on 8:00 AM - 5:30 PM, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on (703) 305-4795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TRANG TRAN
PATENT EXAMINER

TT
May 25, 2004